

Multicon (Oriented Wire) Shielding Gasket (1500 Series)

MAJR's Multicon Material is a combination of silicone and conductive wires which provides a superior environmental seal and EMI/RFI shielding. The two materials are combined to form a single sheet material which can be converted to strips or cut into custom shapes.

Multicon is provided in solid or sponge silicone with either monel or aluminum wires for conductivity. The conductive wires are dispersed throughout the width of the material to provide the best possible protection against EMI/RFI contamination. Constructed in such a way that when pressure is applied to the gasket, hundreds of sharp wire ends become exposed making electrical contact with the surfaces to be shielded.

Multicon is used in high pressure requirements using solid silicone and low pressure requirements using sponge silicone, both having a temperature range of -60°F to 500°F under continuous use.

Design Data

Multicon EMI Gasket

EMI gaskets fabricated from Multicon can be secured to the lid of an enclosure by spot bonding with a nonconductive adhesive or coating of the entire interface with conductive adhesive. In either case, a slight pressure (10 PSI - .70gms/cm²) is recommended during adhesive setting period to ensure that the gasket lies flat against mating surface.

Multicon EMI gasket material also lends itself to groove installation. Groove walls should have a seven degree (7°) draft to allow for elastomer flow under compression.

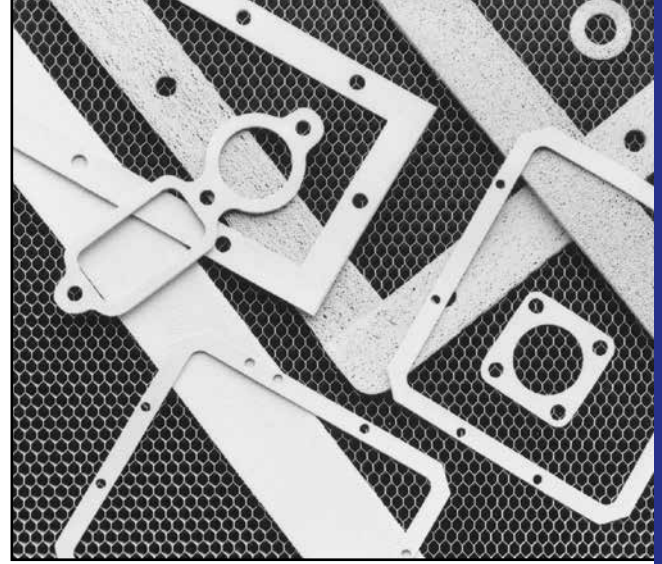
EMI Shielding

The data presented in Table 1 represents shielding effectiveness of Multicon gaskets based on laboratory tests of a unit whose finished dimensions are 12.00 x 12.00 inches (304.8 x 304.8 mm).

Shielding Effectiveness vs Frequency — Table 1

Field	Material Code - 03							
	Frequency							
	10 kHz	100 kHz	1 MHz	18 MHz	100 MHz	400 MHz	1 GHz	5 GHz
H	50	65	95	—	—	—	—	—
E	—	—	—	100	—	—	—	—
PW	—	—	—	—	100	100	100	85

Field	Material Code - 04							
	Frequency							
	10 kHz	100 kHz	1 MHz	18 MHz	100 MHz	400 MHz	1 GHz	5 GHz
H	43	52	75	—	—	—	—	—
E	—	—	—	95	—	—	—	—
PW	—	—	—	—	95	95	85	70



Features

- Cost Effective Material:** Multicon provides excellent shielding at a fraction of the cost of many conductive elastomers products as well as creating a good moisture seal needed in many applications
- High Reliability:** MAJR has combined monel wire and silicone rubber. Through MAJR's proprietary methods, the wires are fused to the silicone providing the highest possible reliability when used to protect electronic circuits.
- Excellent Attenuation Characteristics:** MAJR's Multicon material has a proven history of years of successful shielding applications. The attenuation characteristics of over 100dB in the E-Field to over 50 dB in the H-Field makes Multicon ideal for a wide variety of applications.

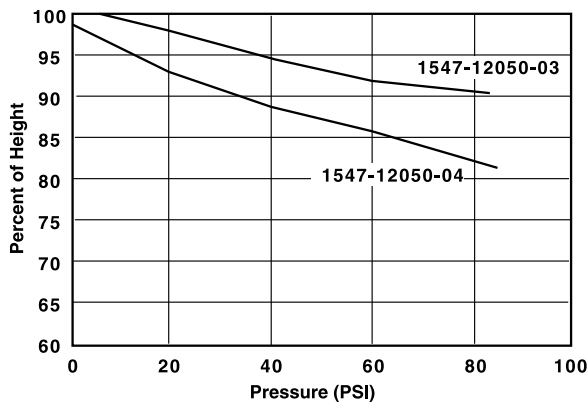
Table 2

CRITERIA	STANDARD	
	Solid Silicone	Sponge Silicone
Color	Gray	Gray
Durometer	MED	N/A
Wire Distribution (Contacts per inch ²)	700-900	225-300
Wire Void Area	.09 Dia. Max.	.156 Dia. Max.
Total Voids	1 per foot	3 per foot
Uniformity of Contact Surface Flatness in Inches	Within .004	Within .010

Installation Forces

Knowing the operating environment is very important when determining the pressures required to compress the Multicon gasket to its optimum point. In less severe conditions such as dust and drip-proofing, sponge Multicon can be used, thus reducing the amount of pressure required to deflect gasket 10% by approximately 40 PSI (2.8 gms/cms). Figure 1 shows comparative compression characteristics between sponge and solid Multicon.

Compression vs Pressure — Figure 1



Multicon Sheet Part Numbers

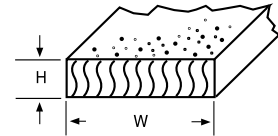
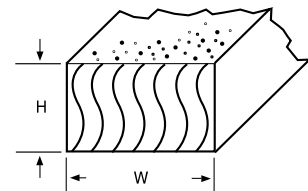


Table 3

HEIGHT H	WIDTH W	SILICONE & MONEL		SILICONE & ALUMINUM	
		Solid	Sponge	Solid	Sponge
.032 (0.76)	3.000	1547-03300-03	1547-03300-04	1547-03300-07	1547-03300-08
.040 (1.02)	3.000	1547-04300-03	1547-04300-04	1547-04300-07	1547-04300-08
.062 (1.57)	3.000	1547-06300-03	1547-06300-04	1547-06300-07	1547-06300-08
.125 (3.18)	3.000	1547-12300-03	1547-12300-04	1547-12300-07	1547-12300-08
.040 (1.02)	6.000	1547-04600-03	1547-04600-04	1547-04600-07	1547-04600-08
.062 (1.57)	6.000	1547-06600-03	1547-06600-04	1547-06600-07	1547-06600-08
.125 (3.18)	6.000	1547-12600-03	1547-12600-04	1547-12600-07	1547-12600-08
.040 (1.02)	9.000	1547-04900-03	1547-04900-04	1547-04900-07	1547-04900-08
.062 (1.57)	9.000	1547-06900-03	1547-06900-04	1547-06900-07	1547-06900-08
.125 (3.18)	9.000	1547-12900-03	1547-12900-04	1547-12900-07	1547-12900-08

Monel, aluminum strips and sponge sheets available.

Supplied in 36" lengths; other sizes available.



Multicon Strip Part Numbers

Table 4

HEIGHT H	WIDTH W	SILICONE & MONEL		SILICONE & ALUMINUM	
		Solid	Sponge	Solid	Sponge
.032 (0.76)	.125 (3.18)	1547-03012-03	-	1547-03012-07	-
.032 (0.76)	.250 (6.35)	1547-03025-03	-	1547-03025-07	-
.032 (0.76)	.500 (12.70)	1547-03050-03	-	1547-03050-07	-
.040 (1.02)	.125 (3.18)	1547-04012-03	-	1547-04012-07	-
.040 (1.02)	.250 (6.35)	1547-04025-03	-	1547-04025-07	-
.040 (1.02)	.500 (12.70)	1547-04050-03	-	1547-04050-07	-
.062 (1.57)	.125 (3.18)	1547-06012-03	1547-06012-04	1547-06012-07	1547-06012-08
.062 (1.57)	.188 (4.78)	1547-06019-03	1547-06019-04	1547-06019-07	1547-06019-08
.062 (1.57)	.250 (6.35)	1547-06025-03	1547-06025-04	1547-06025-07	1547-06025-08
.062 (1.57)	.375 (9.53)	1547-06038-03	1547-06038-04	1547-06038-07	1547-06038-08
.093 (2.36)	.125 (3.18)	1547-09012-03	1547-09012-04	1547-09012-07	1547-09012-08
.093 (2.36)	.250 (6.35)	1547-09025-03	1547-09025-04	1547-09025-07	1547-09025-08
.125 (3.18)	.125 (3.18)	1547-12012-03	1547-12012-04	1547-12012-07	1547-12012-08
.125 (3.18)	.250 (6.35)	1547-12025-03	1547-12025-04	1547-12025-07	1547-12025-08
.125 (3.18)	.500 (12.70)	1547-12050-03	1547-12050-04	1547-12050-07	1547-12050-08
.188 (4.78)	.188 (4.78)	1547-19019-03	1547-19019-04	1547-19019-07	1547-19019-08
.250 (6.35)	.125 (3.18)	1547-25012-03	1547-25012-04	1547-25012-07	1547-25012-08
.250 (6.35)	.250 (6.35)	1547-25025-03	1547-25025-04	1547-25025-07	1547-25025-08